

• COLORADO RIVER •
AQUEDUCT NEWS

THE METROPOLITAN WATER DISTRICT

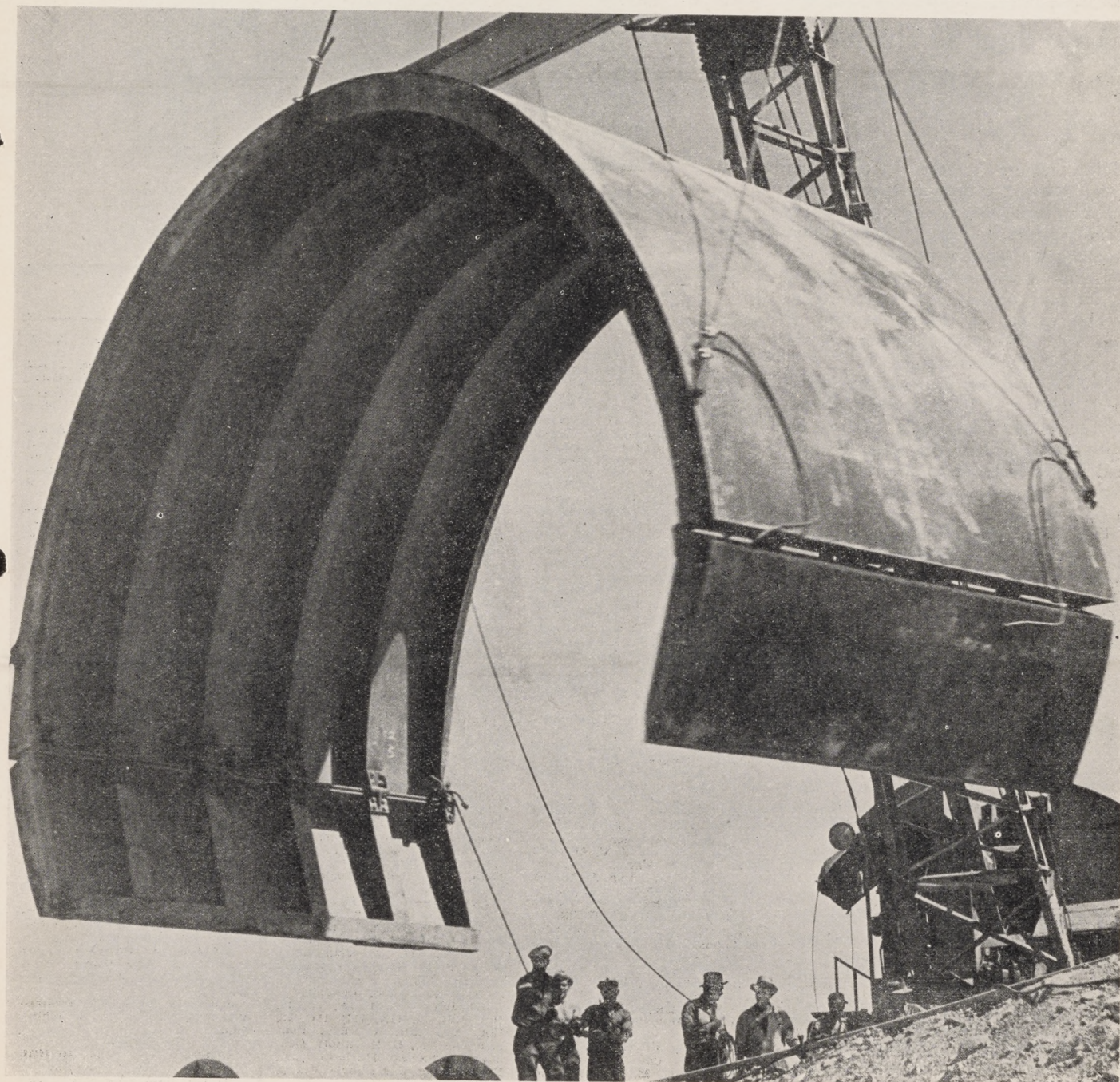


OF SOUTHERN CALIFORNIA

Vol. III.

JUNE 23, 1936

No. 12



Moving Conduit Forms at Fan Hill.

• COLORADO RIVER • AQUEDUCT NEWS

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

LOS ANGELES, CALIFORNIA

Published twice monthly in the interest of Field and Office Workers on the Colorado River Aqueduct, and for the information of all other citizens of the Metropolitan Water District.

Vol. III June 23, 1936 No. 12

Aqueduct Is Praised By Mayor Shaw of L. A.

High tribute to the Metropolitan Water District Aqueduct project was paid recently by Mayor Frank L. Shaw of Los Angeles, following an inspection trip along the route of the project.

"I can say without reservation that I am not only pleased, but impressed by my observations on my recent tour of inspection of the Metropolitan Aqueduct," Mayor Shaw stated.

"It is a wonderful project in competent hands. It is only after several days of viewing this project in all of its aspects that one comes to grasp its tremendousness from an engineering standpoint and its vast importance to Southern California.

"Because of the Metropolitan Aqueduct we can say with the utmost confidence that the member cities of the Metropolitan Water District are on the threshold of a new advancement and progress beyond anything we have thus far witnessed."

Publisher Is Visitor

Col. W. T. Chevalier, vice-president of the McGraw-Hill Publishing Company which issues Engineering News-Record, Construction Methods and numerous other magazines in the construction and engineering fields, was a visitor along the aqueduct line recently. He was accompanied by F. J. Connolly, manager of the Southern California Chapter of the Associated General Contractors; O. C. Struthiers and Harold Crowell, directors of the A. G. C.; Assistant General Manager J. L. Burkholder of the District, Julian Hinds, assistant chief engineer of the District, and R. B. Diemer, the District's distribution engineer.



The long and short of it on the aqueduct. Inspector H. E. Robinson (five feet five inches), John R. Austin, superintendent of Berdoo and Pushawalle concreting operation (six feet seven inches), and Safety Engineer Tom W. Osgood (five feet seven inches), talk over the safety situation at the west portal of 1000 Palms tunnel.

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Divisions 5 & 6.....J. B. Bond
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SUPERINTENDENTS

(Main Aqueduct Tunnels)
Colorado River, Copper Basin and Whipple Mt. Tunnels, Walsh Construction Co., W. A. Huntington and L. M. Ramey, Tunnel Supts.
Coxcomb Tunnel and Iron Mt. shaft, Winston Bros., E. A.

Bernard, Gen. Supt.; F. T. Hillman and R. V. Johnson, Tunnel Supts.

Iron Mt. Tunnel, West Portal, Utah Construction Co., Ben Arp, Gen. Supt.

East Eagle Mt. Tunnel and West Eagle Mt. Tunnel, east portion, Broderick & Gordon, C. J. Kavanagh, Gen. Supt.

Coachella Tunnel, Dist. Force Acct., R. C. Booth, Gen. Supt.
Fargo, East Coachella Tunnel, concrete, V. T. Davis, Supt.

Pushawalla and Berdoo, East Coachella Tunnel, concrete, John Austin, Supt.

Thousand Palms, Lyle McMillen, Gen. Foreman.

Wide Canyon and Long Canyon, concrete, Kenneth MacIssac, Supt.

Morongo, R. Ferry, Supt.

San Jacinto Tunnel, District Force Acct., B. C. Leadbetter, Gen. Supt., A. L. Simpson, Neil O'Donnell and C. E. Sides, Tunnel Supts.; Chas. F. Thomas, Jr., Gen. Foreman.

Valverde Tunnel, Dravo Contr. Co., R. W. Remp, Gen. Supt.; H. C. Richardson, Asst. Gen. Supt.; Fred Youmans, Tunnel Supt.; John Will, Concrete Supt.

(Distribution Tunnels)

Monrovia tunnels Nos. 1, 2 and 3, West Construction Co., H. E. Carleton, Gen. Supt.; O. V. Humason, Peter Brisbois and Angus MacDonnell, Tunnel Supts.

Sierra Madre tunnel, J. F. Shea Co., Inc., Edmund H. Shea, Supt.

Pasadena tunnel, San Rafael tunnels Nos. 1 and 2, and Monrovia tunnel No. 4, L. E. Dixon Co., Bent Bros., Inc., and Johnson, Inc., H. J. King, Gen. Supt.; S. D. Hackley and P. C. Guinn, Supts.

(Canal, Siphon, Conduit)

Schedules Nos. 1, 1A, 1B, 10, 10A, 10B, 11, 11A, 11B, 11C, 13, 13A, and 13B, Aqueduct Construction Co., C. M. Elliott, Gen. Supt.; Charles Harlowe, Jr., Excav. Supt., and Charles Clapp, Supt.

Schedules Nos. 2, 2A, 2B, 3, 3A, 3B, 7 and 7A, Barrett &

Hilp and Macco Corp.; H. W. McKinley, Supt.

Schedules Nos. 4, 4A, 5 and 5A, Jahn & Bressi Construction Co., Joseph Muscolo, Gen. Supt.; Dominick Bressi, Asst. Gen. Supt.

Schedules Nos. 6, 8, 8A and 8B, Clyde W. Wood and M. J. Bevanda, A. F. Weesner, Gen. Supt.; L. L. Green, Excav. Supt.; A. V. Fisher and V. S. Price, Concrete Supts.

Schedules Nos. 9, 9A, 9B and 9C, The Utah Construction Co., Ben Arp, Gen. Supt.; E. C. Caldwell, Excav. Supt.

Schedules Nos. 12 and 12A, Three Companies, Inc., C. J. Kavanagh, Supt.

Schedules Nos. 14, 15 and 16, Thompson-Starrett Co., Inc., Arthur Langevin, Gen. Supt.; Rodney Smith, Resident Engineer; William Hayes, Excav. Supt.

Schedule 17, Dist. Force Acct., H. Hjalmarson, Gen. Foreman (Fan Hill) and P. J. Lynch, Gen. Foreman (Wide Siphon).

Schedule 18J, Morrison-Knudsen, J. O. Young, Gen. Supt.

Schedules Nos. 18, 19 and 20, J. F. Shea Co., Inc., H. F. Rennebohm, Supt.

Schedules Nos. 20A, 20B, 20C, 21, 22 and 23, The Griffith Co., Harry Davis, Supt.

(Distribution Pipe Line)

Schedules No. 4P & 5P, American Concrete & Steel Pipe Co., Wm. A. Whiting, Gen. Supt.; D. H. Rankin, Plant Supt.; J. C. Connell, Const. Supt.

Schedules 6P & 7P, J. F. Shea Co., Inc., Joseph Shea, Gen. Supt.; Don Lind, Plant Supt.

Schedule 8P, United Concrete Pipe Corp., John Huber, Plant Supt., Charles Johnston, Const. Supt.

Schedules 2B & 2S, Western Pipe & Steel Co., L. L. White, Supt.

(Dams)

Cajalco dam, The Griffith Co., Harry Davis, Gen. Supt.

Parker dam, Six Cos., Inc., Perry Yates, Gen. Supt.; E. A. Moritz, Eng. in charge.

ON PROGRESS

CANAL, CONDUIT AND SIPHON (MILES)
Completed Remaining

Excavation	111.89	34.04
Concrete	104.96	39.92
Back Fill	46.99	35.60

CANAL, CONDUIT, SIPHON & PIPE LINES

May 30 to June 13, 1936

DISTRIBUTION PIPE LINES (MILES)
Completed Remaining

Excavation	2.75	38.83
Concrete	2.11	39.47
Back Fill	1.91	39.67

AQUEDUCT

SCHED. NO.	CONTRACTOR	FEATURES	Length In Feet	EXCAVATION—Feet			CONCRETE—Feet			BACKFILL—Feet		
				Period	To Date	Remain'g	Period	To Date	Remain'g	Period	To Date	Remain'g
1	AQUEDUCT CONSTR. C.	Conduit and Siphons	22,025	0	22,025	0	0	22,025	0	0	16,645	5,380
2	BARRETT & HILP	Conduit and Siphons	31,214	1,267	26,904	3,665	0	24,584	5,985	0	22,400	8,169
3	AND MACCO CORP.	Canal and Siphons	40,700	0	37,895	2,805	0	32,005	8,695	0	1,390	11,255
4	JAHN & BRESSI	Canal and Siphons	53,218	0	53,218	0	0	53,218	0	0	1,992	1,083
5	CONSTR. CO.	Canal and Siphons	53,588	0	53,588	0	0	53,588	0	0	2,700	1,320
6	WOOD AND BEVANDA	Siphon	15,521	0	15,521	0	0	15,521	0	0	13,043	2,478
7	BARRETT & HILP	Canal and Conduit	27,707	0	27,707	0	0	27,707	0	0	12,170	0
8	WOOD AND BEVANDA	Canal and Siphons	49,579	0	49,579	0	0	49,174	405	0	7,090	800
9	UTAH CONSTRUCTION CO.	Canal, Conduit and Siphons	47,399	0	45,788	1,611	0	44,074	3,325	0	793	5,442
10		Canal and Siphons	44,505	0	44,505	0	0	44,505	0	0	4,694	156
11	AQUEDUCT CONSTR. CO.	Canal, Conduit and Siphons	44,142	942	1,032	43,475	0	0	44,507	0	0	10,462
12	THREE COMPANIES, INC.	Conduit and Siphons	32,977	0	28,789	4,188	0	24,652	8,325	0	23,030	9,947
13	AQUEDUCT CONSTR. CO.	Canal, Conduit and Siphons	31,965	247	23,496	8,469	0	11,782	20,183	0	0	3,665
14		Conduit and Siphons	32,366	0	32,366	0	0	32,366	0	2,225	31,460	906
15	THOMPSON-STARRETT CO.	Conduit and Siphons	35,849	0	413	35,436	0	403	35,446	0	0	35,849
16		Conduit and Siphons	19,359	0	0	19,359	0	0	19,359	0	0	19,359
17	M. W. D.—FORCE ACCT.	Conduit and Siphons	21,957	0	13,880	8,077	90	12,150	9,807	1,167	11,605	10,352
18	J. F. SHEA CO., INC.	Conduit and Siphons	27,537	950	13,900	13,637	753	13,660	13,877	4,046	9,833	17,704
18J	MORRISON-KNUDSEN CO.	Siphons	9,809	0	9,809	0	0	9,809	0	0	9,809	0
19		Conduit and Siphons	37,464	0	0	37,464	0	0	37,464	0	0	37,464
20	J. F. SHEA CO., INC.	Siphons	18,618	0	18,618	0	0	18,618	0	0	18,618	0
20 A & B		Siphons	735	0	705	30	0	0	735	0	0	735
21		Siphons	14,613	0	14,613	0	0	14,307	306	0	14,019	594
22	GRIFFITH COMPANY	Siphons	7,229	0	7,229	0	979	6,937	292	1,325	6,600	629
23	(Outlet Channel Unlined)	Conduit and Outlet Channel	38,699	330	38,169	530	1,113	33,100	49	1,150	30,582	2,567
3	WINSTON BROS. CO.	Siphon (Gene Inlet)	1,877	102	1,622	255	0	589	1,288	60	230	1,568
4	& WILLIAM C. CROWELL	Siphon (Copper Basin)	450	0	0	450	0	0	450	0	0	0
TOTALS			761,102	3,838	581,371	179,731	2,935	544,774	210,778	9,973	238,703	187,958

DISTRIBUTION PIPE LINES

1	AMER. CONC. & STL. PIPE CO.	Precast Concrete Pipe	12,227	0	12,227	0	12,227	0	12,227	0	12,227
2	WESTERN PIPE & STL. CO.	Welded Steel Pipe	54,530	1,230	2,790	51,560	0	54,530	0	0	54,530
3			20,124	0	20,124	0	0	20,124	0	0	20,124
4	AMER. CONC. & STL. PIPE CO.	Precast Concrete Pipe	25,867	2,163	11,247	14,620	2,308	11,143	14,724	2,758	10,083
5			24,895	0	24,895	0	0	24,895	0	0	24,895
6	J. F. SHEA CO., Inc.	Precast Concrete Pipe	27,348	0	27,348	0	0	27,348	0	0	27,348
7			30,044	0	30,044	0	0	30,044	0	0	30,044
8	UNITED CONC. PIPE CORP.	Precast Concrete Pipe	24,525	312	312	24,213	12	12	24,513	0	24,525
TOTALS			219,560	3,705	14,529	205,031	2,320	11,155	208,405	2,758	10,083

MISCELLANEOUS CONSTRUCTION

May 30 to June 13, 1936

AQUEDUCT PUMPING PLANTS AND APPURTENANT WORKS

CONTRACTOR	FEATURES	EXCAVATION—Cu. Yds.				CONCRETE—Cu. Yds.				STEEL—Tons			
		Est. Quan.	Period	To Date	%	Est. Quan.	Period	To Date	%	Est. Quan.	Period	To Date	%
WINSTON BROS. CO. & WILLIAM C. CROWELL	Intake Plant	102,400	5,000	48,630	47.5								
	Gene Plant	92,600	50	74,170	80.1	13,370	961	961	7.2				
WOOD AND BEVANDA	Iron Mt. Plant	358,700	886	224,231	62.5	19,897	55	55	0.3				
L. E. DIXON CO.	Eagle Plant	227,695	22,394	22,394	9.8	21,122	500	500	2.4	2,160	37.4	37.4	1.7
NOT AWARDED	Hayfield Plant												
TOTALS			28,330	369,425			1,516	1,516			37.4	37.4	

BOULDER TRANSMISSION LINE—FRITZ ZIEBARTH

FEATURES	Length—Line MI.	Period	To Date	Percent
Footings Constructed	237.0	4.5	156.5	66.0
Towers Erected	237.0	10.0	16.2	6.8
Wire Strung	237.0	0	0	0

TELEPHONE LINES—NEWBERY ELECTRIC CO.

FEATURES	Length—Line MI.	Period	To Date	Percent
Converting Spur to Truck Line	7.8	0	7.8	100
Constructing New Trunk Line	139.5	0	139.5	100

PARKER RESERVOIR—SIX COMPANIES, INC.

FEATURES	Est. Quan.	Period	To Date	Percent
Diversion Tunnels—Excav.	3,463 Ft.	0	3,463	100
Diversion Tunnels—Concrete	3,463 Ft.	506	506	14.6
Dam Excavation	1,391,000 C.Y.	0	0	0
Dam Concrete	277,900 C.Y.	0	0	0

CAJALCO RESERVOIR—GRIFFITH COMPANY

FEATURES	Est. Quan.	Period	To Date	Percent
Diversion Tunnel	2,000 Ft.	0	2,000	100
Dam & Dike Excavation	651,000 C.Y.	14,695	140,525	21.6
Dike Fill	4,113,000 C.Y.	176,650	2,591,280	63.0
Dam Fill	3,410,000 C.Y.	19,800	19,800	0.6

COMPLETED FEATURES

TUNNELS					CANAL, CONDUIT AND SIPHON				
CONTRACTOR	TUNNEL	Length in Miles	Work Started	Work Completed	CONTRACTOR	FEATURE AND NAME OR SCHEDULE	Length in Miles	Work Started	Work Completed
MORRISON-KNUDSEN CO.	Mecca Pass, No. 1, 2 & 3	1.13	7-17-33	2-10-35	UNITED CONC. PIPE CO.	LITTLE MORONGO SIPHON	0.13	2-27-34	8-20-34
WEST CONSTRUCTION CO.	Whitewater Nos 1 & 2	1.94	7-18-33	4-15-35	M.W.D.—FORCE ACCT.	FAN HILL COND. & SIPHON	0.32	10-21-33	11-19-34
SHOFNER & GORDON	Hayfield No. 2	1.03	7-8-33	7-27-35	GRIFFITH COMPANY	SCHEDULE NO. 20-C	1.33	5-3-35	9-14-35
HAMILTON & GLEASON	Bernasconi	1.18	4-19-33	11-21-35					
J. F. SHEA CO., INC.	Cottonwood	3.81	6-14-33	12-29-35					
HUNKIN-CONKEY CON. CO.	Hayfield No. 1	1.84	10-21-33	1-9-36					
DIXON & BENT BROS.	W. Eagle-W. Por.	2.02	9-8-33	3-12-36					
TOTALS		12.95			TOTALS		1.78		

MONTHLY REPORT REVIEWS ACTIVITIES ALONG THE AQUEDUCT LINE

(EDITOR'S NOTE: The following is a brief summary of some of the District's activities as set forth in the monthly report of General Manager F. E. Weymouth, filed with the Board of Directors in June and covering work done in May.)

Legal Division

All necessary documents to secure payment for Interim Certificates Nos. 40, 41, and 42, each in the principal sum of \$2,016,000, covering bonds heretofore sold to the R. F. C., were prepared, and payments for said certificates were made on May 1, 11, and 28, respectively.

Miscellaneous Activities Division

Fifteen hundred and five employment applicants were cleared through the District's labor employment office as eligible, from the standpoint of residence, for work on the aqueduct. Of this number, 755 were made available in response to requisitions for force account work and 750 were made available for aqueduct contractors. Certificates of registration were issued to 472 applicants, making a total of 19,905 such certificates issued up to and including May 31. During the month 1,668 labor employment applications were filed.

Field Engineering and Construction

Testing Laboratory—Approximately 256,900 barrels of cement from the Colton, Riverside, Victorville, and Monolith mills were sampled and tested. Up to and including the month of May, approximately 3,000,000 barrels of cement had been used on construction of the Colorado River Aqueduct.

Operation of Utilities—During the period April 15 to May 15, 5,188,985 Kw. Hr. of power was used, 17,034 (long distance) telephone calls were handled, and 5,862,100 cubic feet of water was delivered.

Aqueduct Construction—See tables on Pages 4 and 5 for current construction progress figures.

Civil Engineering Division

Specifications—During May two specifications were issued: No. 156 for traveling cranes for the aqueduct pumping plants and No. 158 for radial gates and hoists for main aqueduct waterways.

Design—Drawings for aqueduct structures appurtenant to the Hayfield pumping plant were prepared, and work on the designs for the Copper Basin and Gene concrete arch dams were continued. Drawings were prepared for the Upper Feeder pipe lines across the San

Gabriel and Monrovia canyons and for the Eagle Rock turnout.

Steel Shipments—During the month orders for 48 tons of rail steel and 2,086 tons of billet steel were placed, making a total on present contracts of 18,429 tons of rail steel and 18,514 tons of billet steel to June 1, 1936.

Electrical Engineering Division

At Caltech Testing Laboratory, tests were completed and approval given on the Byron Jackson model pumps for Intake and Gene plants. Tests on the Worthington model pumps for Eagle Mountain and Hayfield plants were started and continued during the month. Checking of the electrical drawings was completed for Intake, Gene, and Iron Mountain pumping plants, and checking of Eagle Mountain plant was well advanced. Work was also carried on in connection with the drawings for Hayfield, the specifications for which will be issued in July. In connection with the Boulder Dam transmission line, Aluminum cable, hardware and insulators are being received and fabrication of the copper conductor was started at Great Falls, Montana. The Pacific Coast Steel Corporation shipped 560 tons of tower steel during the month. All items in connection with the construction of the Boulder telephone line were completed.

Personnel Division

There were 65 classified positions filled during May. Fifty-nine of these were permanent and six were temporary. Twenty-seven of the permanent positions were filled by transfers from other classified positions and eight were filled by transfers from unclassified positions. The net turnover for all divisions for April was 11.35 per cent, and 11 per cent for the month of March.

Purchasing Division

A total of 1,911 purchase orders was issued during May, covering purchases amounting to approximately \$177,014. A total of 1,964 carloads of materials, equipment, and supplies was shipped to the job during May.

Accounting and Costkeeping

Actual costs up to May 31, 1936, amounted to \$82,294,427.25, covering work and activities, the total cost of which is estimated at \$155,487,754.

Work Goes Ahead On Santa Ana River Crossing

Abutments and piers for the Metropolitan Water District aqueduct bridge over the Santa Ana river near Pedley will be ready for the structural work by September 1, it was indicated this week.

Plans provide for three structural steel arches, 181 feet long and 24 feet wide. These will be supported by three major piers, two of which are completed. There are five minor piers, 15 feet wide.

The pipe line crossing on the bridge will be nine feet eight inches in diameter and will be constructed of seven-eighths inch steel.

The bridge is to be 17 feet above the highest flood water mark in the river and is 710 feet above sea level. The contract calls for the use of 800,000 pounds of steel and 5,500 yards of steel reinforced concrete.

Cuts on each end of the bridge will bring the aqueduct down to the bridge level. The cuts will be backfilled when the pipe has been put in place.

Work on the bridge is being done by Dan Teeters under a subcontract with the Western Pipe & Steel Company which holds a contract for the job.

Special Rates Are Given For Bowl Tickets

As is customary, tickets for the summer symphony concerts in Hollywood Bowl will be available to District employees at reduced rates, it was announced this week. The general admission tickets which regularly sell for 50 cents may be secured from H. G. Hawley, Room 1007 of the L. A. office, for 35 cents each.

Concerts begin July 7, occurring on Tuesday, Thursday and Friday nights until August 28. Five ballets and three operas have been programmed so far.

Conductors who are scheduled to appear during the series include Ansermet, Goossens, MacMillan, Klemperer, Lert, Shepard, and Finston. Soloists include Brampton, contralto; Spaulding, violinist; Bonelli, baritone; Pons, soprano; Heifetz, violinist, and Bauer, pianist.

NEWS FROM FIELD AND OFFICE

Inspector William F. Hile has been transferred from Division 1 to the Distribution division.

* * *

According to Shop Foreman Duke Crosiar at Cajalco, Griffith Company trucks have traveled 20,000 miles per truck in six months—which is really going places and doing things.

* * *

Reports from the Boulder Dam-Aqueduct transmission line reveal that staking is now completed on 231 miles of line, 165 miles of concrete footings have been installed, and 16 miles of towers have been erected.

* * *

Opening of bids for furnishing traveling cranes for aqueduct pumping plants, under Specifications No. 156, has been postponed from June 19 to July 3, it was announced this week. Prices will be received on five cranes, one for each of the five plants.

* * *

The tennis championship of the Los Angeles office has moved from the Mails & Files division to the Labor office. No, this doesn't mean that Jack Cheatham has lost his crown to somebody else. It merely means that Jack has been transferred to the Labor office staff.

* * *

Attended by a large number of members of the Electrical Division staff of the District, the 1936 Summer Convention of the American Institute of Electrical Engineers is now (June 22-26) in progress at the Huntington Hotel in Pasadena. Arrangements have been made for delegates to make trips to points along the aqueduct line in which they are interested.

* * *

Neither fish nor fowl—so far as the aqueduct is concerned—is the Cajalco outlet tunnel on which Broderick & Gordon crews are now getting under way. The bore will have a finished diameter of fourteen feet, making it smaller than the main line tunnels and larger than the distribution tunnels, which are 16 and 10 feet respectively. The Cajalco diversion tunnel also was of an odd diameter (9 feet) but was close enough to the size of the distribution bores so that steel ribs were interchangeable. The outlet tunnel will be approximately 2,500 feet long. Seventy-four feet had been excavated up to May 30.

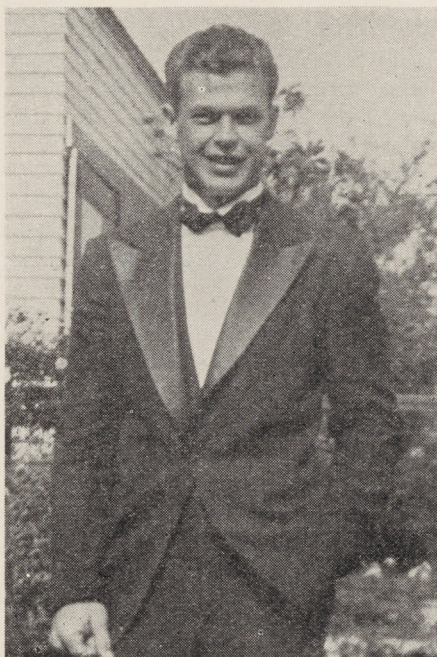
The Coachella Division safety flag for April was won again by the Fargo Aggregate Plant crews, which worked 37,041 man-hours without a lost-time accident. Four camps on the division (Fargo Aggregate, 1000 Palms Excavation, Long Canyon Excavation, and Fan Hill Aggregate) worked a total of 63,098 man-hours during the month without a lost-time injury.

The San Jacinto tunnel safety flag was again awarded to West Portal crews, who worked 41,336 man-hours without a lost-time accident.

Aqueduct Temperatures

June 1 to June 15

	Max.	Min.
Div. 1	114°	59°
Div. 2	113°	60°
Div. 3	111°	58°
Div. 4	106°	54°
Divs. 5 and 6.....	99°	40°



Here's one of the 1936 model miners on the aqueduct. But don't let the soup and fish fool you. Beneath that starched shirt front beats the heart of a true hard-rocker. It's Barney Harwood, who's one of the boys helping to break tunnel records right and left at Little Morongo.

Inspector Victor N. Latimer, formerly on Division 3, is now working on Division 2.

* * *

Inspector Glen R. Lucas has been transferred from Division 4 to the Distribution division.

* * *

Nathan A. Bowers was a recent visitor at the Banning office. Mr. Bowers is Pacific Coast editor of Engineering News-Record.

* * *

Chainman Trew Wilson of the Distribution division staff at Cajalco has resigned his post to accept a position with Broderick & Gordon.

* * *

Inspector Kirby Schlegel, the old sage of the Gavilan Hills, is now making the Welkin ring out Monrovia way, having been transferred from Division 6 to the Distribution division.

* * *

Out at Parker Dam work is going forward on the erection of steel for one of the cableway head towers. It is planned to use two head towers on the Arizona side of the river and one tower on the California side.

* * *

Records of the Safety Division of the District reveal that during the first five months of 1936, the Coachella Division forces operated with a lost-time accident frequency which is 37 per cent below their record for the year 1935. They also show that during the first five months of 1936, the San Jacinto tunnel crews operated with a lost-time accident frequency which is 54 per cent below 1935.

* * *

The magnitude of the aqueduct project is revealed in figures compiled by the office of Purchasing Agent Saul Joseph, showing that during the month of May a total of 1,964 freight carloads of materials was shipped to the job. These included 935 carloads of cement, 865 cars of aggregate, 47 cars of reinforcement steel, 40 cars of general merchandise, 33 cars of lumber and timber, as well as large shipments of aluminum and copper wire, conduit and siphon coating, electrical equipment, explosives, machinery, steel reinforcing mesh, steel for transmission line towers, and tunnel steel.

Safety

T. W. Osgood, safety engineer of the Metropolitan Water District, was one of the principal speakers at the Pacific Coast Safety Conference, held May 28 and 29 at the Biltmore Hotel in Los Angeles.

His address, entitled "Accident Prevention on the Colorado River Aqueduct," was delivered before 250 safety engineers and industrial executives who attended the conference. The main safety features of the job, including the construction equipment and methods, were shown to the audience by means of 80 lantern slides.

Excerpts from Mr. Osgood's remarks follow:

"On the aqueduct project, concerted accident prevention activities have resulted in reducing the lost-time accident frequency 35 per cent from the first to the second fiscal year record, and 50 per cent from the second fiscal year record to that for the first ten months of third or current fiscal year . . .

"The lost-time accident frequency for the first 10 months of the current fiscal year is 20 per cent below the average frequency for California heavy construction comparable to that on the Colorado River Aqueduct . . .

"This substantial decline in the lost-time accident frequency is attributable in a considerable degree to the elimination of physical hazards on the work, but by far the greater influence in realizing this result is the education of the workmen in safe practices and the development of the Safety Spirit within the entire organization . . .

"Prior to beginning construction of the aqueduct the executive officers of the District adopted the policy—"The application of every possible safety measure shall be practiced", and they have carried on a continuous and determined effort to prevent injury to employees on the project . . .

"The division engineers and general superintendents of the District take an active part in the safety program and they are vested with authority to enforce health and safety regulations . . .

"The District's safety staff consists of the safety engineer, Assistant Safety Engineers H. E. Munn, W. G. Knox, and A. B. Woodward, Jr., and Secretary and Statistician Aileen Carmichael. Accident cause-cost tabulations for the District's force account work are compiled by H. M. Wolflin of the District's Compensation Claims Division.

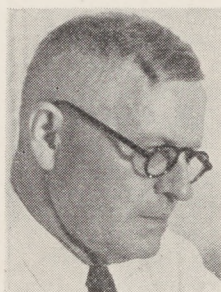
Who's Who On the Aqueduct

(Another of a Series of Short Biographies of Aqueduct Personalities.)

J. B. BOND,

Div. Eng., Divs. 5 and 6.

Was educated at University of Missouri in civil engineering. . . . Started in engineering in 1901 as instrumentman for C. B. & Q. R. R. . . . Joined U. S. Reclamation Service in 1904 as resident engineer on canal construction. . . . During 1908-10 was chief engineer for Montana Land & Water



J. B. Bond

Co. . . . Was project engineer on Sun River project, Montana, for U. S. R. S. during 1911-13. . . . Spent 1914 with American Red Cross on engineering work in North Central China. . . . Was with Reclamation Service from 1915 to 1926 as project engineer and project manager on important jobs in Montana, Oregon and Idaho. . . . During 1927-29 was in charge of investigations on irrigation projects for Mexican Government on Yaqui and Mayor rivers. . . . Has been with M. W. D. since 1929. . . . Until 1933 in charge of investigations, surveys, and estimates in connection with aqueduct project. . . . Since 1933 has been in charge of construction and various features of aqueduct project. . . . Is married and has four children.

C. J. KAVANAGH,

Supt., Broderick & Gordon and Three Companies

Born in Chicago. . . . From 1915 to 1925 was superintendent for Twohy Brothers on tunneling, concrete highways, steel ships, and general construction work. . . . Was Superintendent for this firm on Hollywood subway for Pacific Electric. . . . During 1925-26, under firm name of Kavanagh & Twohy, built



Rex B. Sawyer

10 miles of concrete highway in California. . . . Was a subcontractor, 1926-28, on 15-mile section of pipe line for East Bay Utilities District. . . . During 1928-29 was superintendent for J. F. Shea Company on Sacatello Outfall Sewer for City of L. A. . . . Was superintendent, during 1929-32, for D. A. Foley Co. on construction of five miles of levee on Yolo By-Pass near Sacramento and



C. J. Kavanagh

on two miles of levee along San Gabriel River in Southern California. . . . Joined M. W. D. in 1933 as superintendent at Pushawalla camp. . . . Became superintendent for Broderick & Gordon in June, 1934 on Eagle Mt. Tunnel. . . . Is married and father of three children.

REX B. SAWYER,

Gen. Supt., The Griffith Company

A native son of California, born at La Canada, and educated at Oxnard. . . . Has been in the employ of the Griffith Company since 1917, with exception of one year, spent in U. S. Navy. . . . Spent ten years as superintendent of construction for the Company in the Long Beach-Wilmington-San Pedro harbor area. . . . This included paving and road building and the erection and reconstruction of buildings for the Harbor Department.

Supervised extensive reconstruction activities after the earthquake. Was in charge of Cajalco Dam construction for Griffith Company until a few days ago when he was transferred to the Los Angeles office to become general superintendent in charge of all highway construction and miscellaneous work of the Griffith Company. . . . Is married and the father of one son.

Pumping Plant Transformer Bids Asked

Sealed proposals for furnishing electric power transformers for four of the main pumping plants of the aqueduct will be received at District headquarters until 10 a. m., July 29, it was announced this week.

Four transformers, each with a rated output of 22,000 kva, will be ordered

for the Gene plant; seven, each with a rated output of 15,000 kva, for the Eagle Mountain and Hayfield plants; and four, each with a rated output of 5,500 kva, for the Iron Mountain plant. Transformers for the Intake plant will be taken from the construction power system.